

АГРОПРОДОВОЛЬСТВЕННЫЙ РЫНОК: НОВЫЙ ВЕКТОР РАЗВИТИЯ

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ENTREPRENEURIAL POTENTIAL OF PORTUGUESE AGRICULTURE HIGHER EDUCATION STUDENTS: A CASE FROM THE ALTO TRÁS-OS-MONTES REGION, PORTUGAL¹

Ascertaining students' entrepreneurial intention and looking into their perception of the obstacles surrounding the entrepreneurial process are the objectives of this research. To achieve these objectives, a cross-sectional, quantitative, observational and analytical study was developed. To carry out this study, a random sample constituted by 269 students from Braganza School of Agriculture was collected. Descriptive statistics and statistical tests, namely, Mann-Whitney-Wilcoxon test, Kolmogorov-Smirnov with Lilliefors correction test and Levene test were computed using SPSS 16.0.

A likely bankruptcy was identified as a critical factor in starting up a business. Lack of financial support was pointed as the major difficulty concerning business development. However, according to the results, 35.2 % of the respondents would like to create their own business and contribute to the development of the regional economy, specifically, in the agriculture, food, biotechnological and environmental sectors.

Keywords: Entrepreneurial Potential, Agriculture Higher Education Students, Business Constraints Factors

1. Introduction

In recent years, the liberalization of jobs that has made many professionals redundant while not absorbing most of those who make themselves available for organizations every year, has put significant pressure on society in general and Higher Education institutions in particular, demanding that both change their behaviour and skills in order to keep up with a new concept of employment which is no longer the traditional one (Bronosky, 2008). It is the task of Higher Education Institutions to give their students the necessary tools and encourage them to be entrepreneurial so as to be able to set up new firms that can create jobs as well as economic development. Identifying entrepreneurial potential and subsequently enhancing it will be beneficial for society (Hull, Bosley & Udell, 1980). In this context, a research was carried out with the purpose of knowing the students' entrepreneurial potential and looking into their perception of the obstacles and difficulties surrounding an entrepreneurial process. Therefore, a quantitative, observational, cross-sectional and analytical study was devel-

oped by directly administering a questionnaire to students of a Higher Education Institution during July 2010. The present paper is structured into five sections, the first being the introduction. In section two, a brief theoretical framework is presented, highlighting the importance and contribution of entrepreneurship to the economy and society. Section three corresponds to the empirical part of the study and also includes the methodology that was followed. Section four provides the results and their discussion divided into two parts, comprising a descriptive and a comparative analysis, respectively. Finally, section five draws some final remarks.

2. Theoretical framework

Nobody is born an entrepreneur. Entrepreneurial skills can be learned, developed and perfected. Entrepreneurship is a cultural phenomenon closely linked to the educational process and one that can lead to the creation of business ventures capable of contributing to local and regional development (Binotto, Büllau & Roese, 2004). And that is where Higher Education Institutions have a word to say. There is much evidence to support the view there is a direct relationship between a community's entrepreneurial level and local economic development. In fact, economic development pro-

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cess is associated with innovation created by entrepreneurs (Martens & Freitas, 2008; Mazzarol, Volery, Doss & Thein, 1999; Kristiansen & Indarti, 2004). Entrepreneurial education promotes the emergence of new business ventures, giving rise to an entrepreneurial spirit. An entrepreneurial attitude usually results in the creation and innovation of businesses, new processes and services which together with management of knowledge can lead to a development strategy combining the increase of jobs and opportunities with the raise of productivity (Castillo, Venegas, Leiva, Bennett, Ortiz & Neto, 2008). The level of schooling has a great influence on people's attitude and aspirations (Wang & Wong, 2004). Accepting that education can help form an entrepreneurial personality is paramount for developing entrepreneurial education and consequently boosting social development (Lima, Santos & Dantas, 2006). The importance of entrepreneurship can be summed up in four items (Gaspar, 2009). According to this researcher, entrepreneurship: a) is an important source of job creation; b) plays a major role in innovating economy and becomes the mechanism that leads it, as well as society, in the path of evolution and progress; c) is a career option for a substantial part of the working force; and d) has a strong impact on regional development and on the growth of economies. On the other hand, university students tend to deem the idea of creating and developing their own job attractive and even fascinating (Kolvereid, 1996). Consequently, international organizations, governments and Higher Education Institutions promote more and more actions and programmes in order to support the development of an entrepreneurial culture while encouraging individuals to develop their entrepreneurial skills as to how to create and develop their own business (Bernardes & Martinelli, 2004; Castillo, Venegas, Leiva, Bennett, Ortiz & Neto, 2008; Schmidt & Bohnenberger, 2009). Entrepreneurship has been favoured by entities, namely Higher Education Institutions, which understand the importance of an entrepreneurial culture for the progress of nations (Minuzzi, Santos, Lezana & Filho, 2007). The fact that universities and polytechnic institutions are willing to promote entrepreneurship represents an opportunity of great potential in the present economy, since qualified entrepreneurship may be a professional opportunity capable of granting the students a promising future. Entrepreneurship is not a job in itself but the attitude of ascribing a new meaning to employability, for it combines experience and practice with the need to integrate the knowledge from different areas. Entrepreneurship is a major job alter-

native (Castillo, Venegas, Leiva, Bennett, Ortiz & Neto, 2008).

3. Methodology

As the heading of this section suggests, we proceed to present the methodology that was followed to carry out this research, namely as regards the participants, the resources involved and the procedures followed. In order to do so, the sampling and data gathering methods are referred, as well as the statistical treatment.

Participants

The population under study consisted of roughly 800 students who attend the school organization course and is the object of this study. If a sample is constituted by at least 260 individuals, it can be considered representative in quantitative terms (Cohen, Manion & Morrison, 2000). Thus, a sample was gathered consisting of 269 individuals who attend the first study cycle of the eight courses taught in Braganza School of Agriculture. In order to obtain a sample that was representative in quantitative terms, some exclusion criteria were established. Questionnaires that were not fully responded were ruled out. It was a simple random sample, since each of the sampling units that constitute the population had an equal probability of being selected and consequently be part of the sample. As shown on Table 1, the sample consisted of 69 % female and 31 % male students. Despite the imbalance, results were not biased because, in the population that was being studied, the proportion of male to female students was similar. The age of the students that were interviewed ranged between 18 and 46, the age average being $21.9 (\pm 3.7)$. The great majority of the students were enrolled as ordinary students (83.9 %).

Resources

The tool used to collect the data was the Inquest to Propensity to Entrepreneurship (Rosário, 2007) consisting of 17 questions, namely about the stu-

Table 1

Sample characterization

Variables	Percent	Frequency
Gender		
Female	69.3	186
Male	30.7	83
Age Group		
18–21 years of age	62.7	169
≥ 22 years of age	37.3	100
Attendance Regime		
Ordinary	83.9	226
Student worker	5.1	14
Students' Union Leader	10.2	27
Other	0.7	2

dents' performing of duties in associations/organizations, their attendance of international mobility programmes, their doing any type of paid activity, their having a close relative who is a business person, the type of job they would like to have, in which sector they would like to work, their main concerns regarding the creation of their own business, the main difficulties in starting up a business, the factors that contribute most for the success in creating and developing their own business, their gender, age, statute and expected final grade at the end of the course.

Procedures

Data were collected in a single moment (July 2010) after permission had been obtained from the school responsables. This was a cross-sectional study because the phenomenon studied occurs at a certain date either in the past or in the present (Polit & Hungler, 1995). The participants were approached by a member of this research team in a classroom context. Students were first informed about the nature and goals of the research and ensured the anonymity and confidentiality of the data after which they were asked to participate on a voluntary basis. The time taken to fill in the questionnaires was 10 minutes on average.

Data were edited and treated with recourse to SPSS 16.0 (Statistical Package for Social Sciences). Descriptive statistics was used to characterize the sample, namely as regards calculating relative and absolute attendance whenever variables were nominal; and central tendency measures (mean and median) as well as dispersion measures (standard deviation) whenever variables were ordinal or superior. In order to compare the aspects which correspond to students' major fears involving the creation of their own job and also what they see as the main difficulties in doing so, as regards two independent groups (Gender: male and female; Age group: 18–21 and ≥ 22 years of age) the Mann-Whitney-Wilcoxon test was applied. Although this is a non-parametric test, it was preferred over the parametric T-Student for independent samples, since when the application conditions of parametric tests were tested, namely data normality and variance homogeneity, using the Kolmogorov-Smirnov with Lilliefors correction test and Levene test, respectively, it was verified that at a 5 % significance level, data did not follow Normal distribution. When such a situation occurs, it is advisable to use non-parametric alternatives, since when one of the conditions for application of parametric tests is not observed, non-parametric tests are more powerful (Maroco, 2007).

4. Results

In this section, results of a questionnaire applied to first year students of a Higher Education Institution are presented and looked into. It is divided into two parts, the former consisting of a descriptive analysis of the results and the latter of a comparative analysis taking into account gender and age.

Descriptive analysis

Bearing in mind the type of job respondents would like to do, it is clear 35.2 % of them would like to be exclusively self-employed. However, the great majority (55.6 %) chose two options: being self-employed and being an employee. Similar results were reported by another author, who claims the entrepreneurial phenomenon in Portugal has worryingly low levels, which is mostly accounted for by the historical evolution of both the economy and the society but also because the levels of innovation and access to knowledge are quite low (Gaspar, 2008).

The intention to be entrepreneurial is especially evident among female respondents as compared to their male counterparts (69.4 % versus 30.6 %), the youngest students (67.4 % versus 32.6) and respondents who wished to pursue a career in the private sector (44 %) (see Table 2).

Comparing potential entrepreneurs, that is, students who would like to be exclusively self-employed (TBESE) with those who would like to be exclusively an employee (TBEE) one verifies that the number of potential entrepreneurs is larger when other factors are part of the equation, namely performing duties as Association members (32.7 % versus 30.8 %), having a job (40.8 % versus 38.5 %), having some close relative who is a business person (49 % versus 23.1 %) and the academic achievement (35.3 % versus 2.9 %). In a study carried out in several Latin American countries, Dolabela, Santos and Family largely influences the choice of a career either as an entrepreneur or an employee (Dantas, 2008). Family upbringing and social environment are largely responsible for the formation of entrepreneurs (According to Faleiro, Salvi, Marmitt, Pereira & Dalmoro, 2006). Those who have any relatives who are business people act differently from those who do not (Bohnenberger, Schmidt & Freitas, 2007). In fact, having a relative who is a business person positively influences the entrepreneurial attitude Olmos & Castillo, 2008). On the other hand, student workers are more prone to business creation (Carvalho & González, 2006).

Curiously, contrarily to literature, potential entrepreneurs were the ones who were less keen on participating in international mobility pro-

Table 2

Groups	Entrepreneurial Potential		
	Entrepreneurial Skill (%)		
	To be exclusively an employee (TBEE)	To be exclusively self-employee (TBESE)	TBEE and TBESE
Gender			
Female	61.5	69.4	70.5
Male	38.5	30.6	29.5
Age Groups			
18 to 21 years of age	58.3	67.4	60.5
≥ 22 years of age	41.7	32.6	39.5
Duties in an association/organization			
Yes	30.8	32.7	45.6
No	69.2	67.3	54.4
International mobility Programme			
Yes	15.4	2	5.1
No	84.6	98	94.9
Paid Activities			
Yes	38.5	40.8	38.5
No	61.5	59.2	61.5
Relatives who are business people			
Yes	23.1	49	64.6
No	76.9	51	35.4
Sector where you would like to work			
Private	12	44	44
Public	8.2	32.9	58.9
Makes no difference	5.9	23.5	70.6
Expected final grade			
Average	12.9	37.6	49.4
Good/Very Good	2.9	35.3	61.8
Total	9.2	35.2	55.6

grammes (2 % versus 15.4 %). On the whole, these results are consistent with another study (Gaspar, 2008). However, most of the research on the subject points to likely entrepreneurs being basically male (Scott & Twomey, 1988; Olmos & Castillo,

2008) and revealing low academic achievement (Gaspar, 2008).

As regards respondents' opinions as to their major fears in creating their own business, responses vary between entre 1 (no fear) and 5 (much

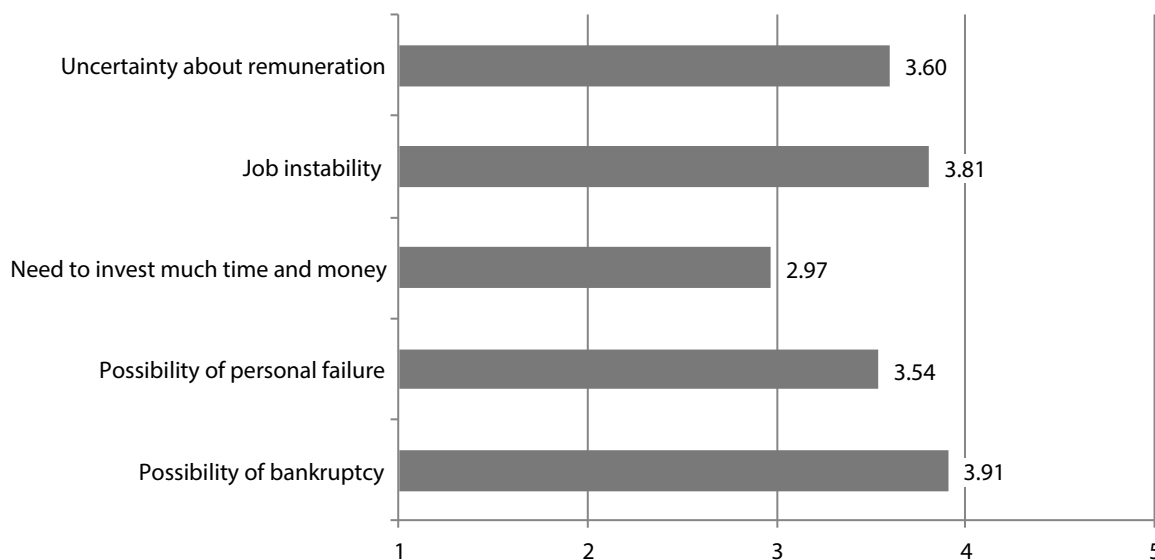


Fig. 1. Main fears associated with the idea of creating one's own business (weighted average)



Fig. 2. Main difficulties in starting up one's own business (weighted average)

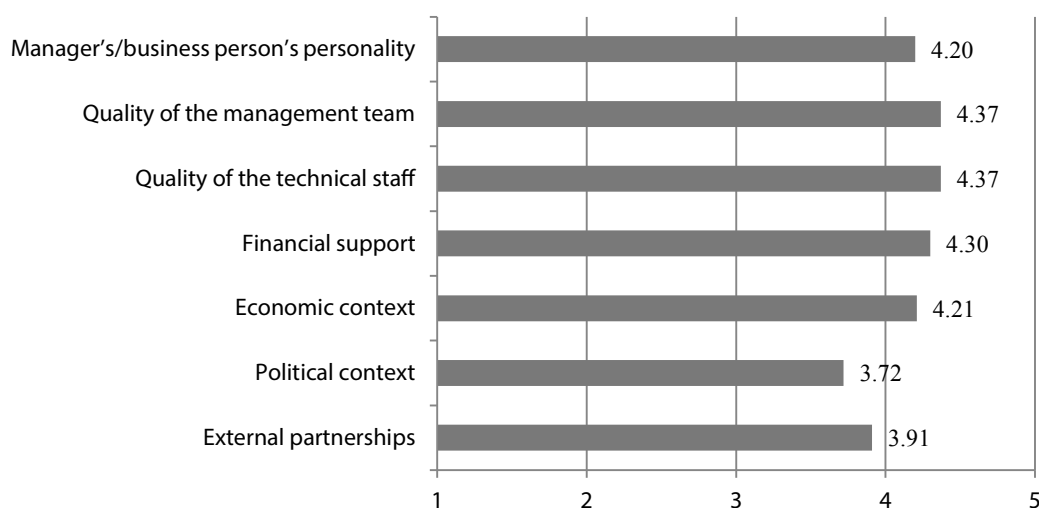


Fig. 3. Importance of some factors to the success of a firm (weighted average)

fear), the average point of the response interval being 3. As can be seen in figure 1, such aspects as the possibility of bankruptcy (3.91), job instability (3.81), uncertainty about remuneration (3.60) and the possibility of personal failure (3.54) come high or very high in the respondents' list of fears. On the contrary, the only negative aspect registering a level of fear below moderate was the need to invest much time and money, reaching an average of 2.97. Although the conditions for entrepreneurship have increasingly changed for the better, some aspects have remained the same, namely psychological and cultural factors like aversion to risk and fear of failure. Portuguese people prefer the stability of being someone's employee rather than setting their own business.

In what concerns the level of agreement as to difficulties encountered when starting one's own business, responses varied between 1 (totally disagree) and 5 (totally agree). As it can be seen in

figure 2, all statements registered a high level of agreement; the lack of financial support stood out, registering the highest agreement level, with a 4.18 average. In fact, turning ideas into businesses requires the financial means to make them viable and that is one of the main difficulties one has to overcome.

As regards respondents' perception of the importance of some factors for the success of a new firm, responses varied between 1 (unimportant) and 5 (very important). From figure 3, it is possible to conclude all factors were granted a high or very high level of importance. Such factors as the quality of both the managing team and the technical staff stood out, both with a 4.37 average.

Bearing in mind that one of the main goals of Higher Education Institutions is to develop educational syllabuses leading to the emergence of an entrepreneurial spirit, while providing the students with the necessary skills to create and de-

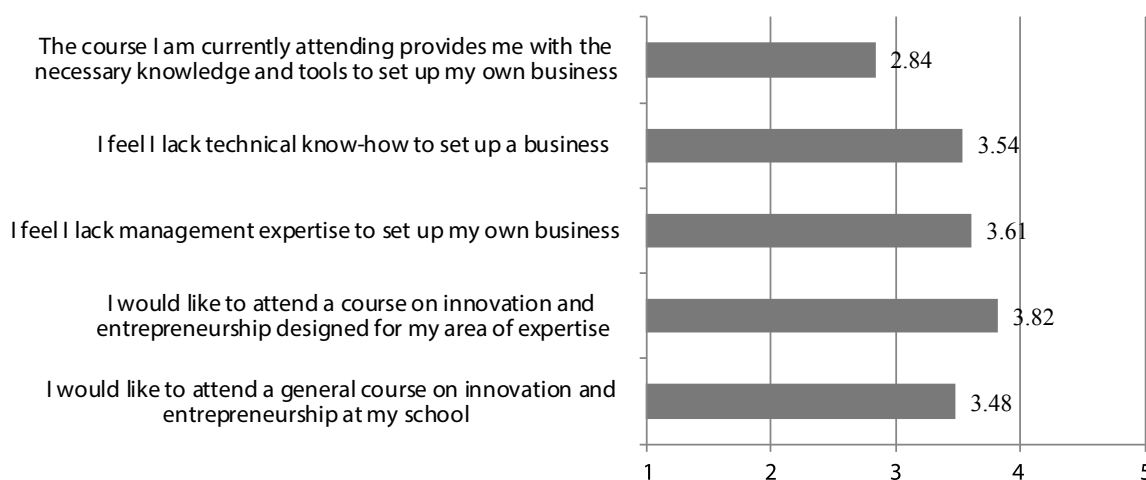


Fig. 4. Level of agreement regarding current and future training on entrepreneurship (weighted average)

velop their own business, the questionnaire included several statements for students to comment on. Each statement was ascribed a level of agreement regarding the students' current and future training on entrepreneurship. Answers varied between 1 (totally disagree) and 5 (totally agree). Figure 4 shows the results on this particular subject; as it can be seen, students showed a higher level of disagreement when confronted with the statement that the course they are currently attending gives them the knowledge and basic tools to help them create and develop their own business. Ultimately, they are willing to attend courses on innovation and entrepreneurship designed for their area of expertise at their own school. Portuguese Higher Education Institutions have not yet chosen a clear strategy on qualified entrepreneurship. Higher Education must endow itself with new pedagogic tools. Encouraging a new attitude or providing students with entrepreneurial skills will not be of much consequence unless one turns words into deeds and new ideas are put into practice (Castillo, Venegas, Leiva, Bennett, Ortiz & Neto, 2008).

Comparative analysis

When the aspects likely to cause more fear when developing one's own business were compared, it was verified that there were statistically

significant differences between female and male students regarding job instability, the possibility of failure and of bankruptcy. In fact, the output of the Mann-Whitney-Wilcoxon test produced test values or significance probabilities (p -value) below the significance level, whereby the null hypothesis ($H_0: \eta_1 = \eta_2$) must be rejected and the alternative ($H_1: \eta_1 \neq \eta_2$), that is the difference between medians, chosen. Results also show that in comparison with men, women are more fearful, as can be seen on Table 3.

As regards comparing the medians of the main reasons for fear when setting up one's own business, taking into account age groups, the Mann-Whitney-Wilcoxon test output showed that, at a 5 % significance level, only did the possibility of failure register statistically significant differences (p -value = 0.041 < 0.05). This result points to younger students being more afraid of failing. (see Table 3).

When comparing the medians of the main difficulties in creating one's own business and taking into account gender and age groups, the Mann-Whitney-Wilcoxon test output showed there are statistically significant differences between genders when it comes to such aspects as the complexities of the administrative process, the lack of management expertise, the high risk of failure and

Table 3

Median comparison regarding main fears in creating one's own business, taking into consideration gender and age groups

Main fears	Gender		p-value	Age		p-value
	Female	Male		18 to 21	≥ 22	
Uncertainty about remuneration	3.70	3.35	0.081	3.71	3.42	0.152
Job instability	3.96	3.44	0.013*	3.92	3.68	0.152
Need to invest more time and money	2.90	3.14	0.262	2.99	2.94	0.812
Possibility of failure	3.71	3.14	0.004*	3.73	3.24	0.041*
Possibility of bankruptcy	4.19	3.28	0.000*	4	3.74	0.303

* There are statistically significant differences for a 5 % significance level.

Table 4

Median comparison of the main difficulties in creating one's own business taking into account gender

Main difficulties	Gender		p-value
	Female	Male	
Lack of financial support	4.23	4.09	0.366
A complex administrative process	3.89	3.51	0.049*
Little information on how to set up a business	3.56	3.51	0.762
Lack of management skills	3.48	3.12	0.032*
Lack of innovating ideas	3.24	2.93	0.115
Lack of institutional backup to set up a business	3.89	3.49	0.086
High risk of failure	3.90	3.05	0.000*
An unfavourable climate for the development of one's own business	4.08	3.58	0.014*

* There are statistically significant differences for a 5 % significance level.

Table 5

Median comparison of the main difficulties in creating one's own business taking into account age groups

Main difficulties	Age		p-value
	18 to 21	≥ 22	
Lack of financial support	4.11	4.36	0.066
A complex administrative process	3.77	3.74	0.885
Little information on how to set up a business	3.55	3.58	0.781
Lack of management skills	3.37	3.29	0.535
Lack of innovating ideas	3.21	3.04	0.413
Lack of institutional backup to set up a business	3.77	3.82	0.872
High risk of failure	3.65	3.66	0.871
An unfavourable climate for the development of one's own business	4.08	3.69	0.096

an unfavourable climate for setting up a business. As it can be seen on Table 4, female students register higher medians as concerns the difficulties surrounding the setting up of one's own business.

When comparing the medians of the main difficulties in creating one's own business and taking into account age groups, the Mann-Whitney-Wilcoxon test output revealed that, regardless of their age, both age groups tend to see difficulties much in the same way (see Table 5).

5. Conclusion

The students who were interviewed are mostly enrolled as ordinary students (83.9 %) and their age ranged between 18 and 46. According to the results, 35.2 % of the respondents would like to be exclusively self-employed and contribute to the development of regional economy, specifically, in the agriculture, food, biotechnological and environmental sectors. The possibility of bankruptcy is what they fear most about creating their own business. On the other hand, lack of financial support is pointed out as the greatest difficulty in developing a business.

When one compares the aspects respondents fear most in creating their own business with the difficulties that developing a business entails, taking into account gender and age groups, one verifies there are statistically significant differences

between males and females when it comes to aspects, such as job instability, the possibility of failure and of bankruptcy, with women being the most fearful.

In what concerns age, there are statistically significant differences as to the possibility of failure, in which case the youngest students are also the ones who fear it most. On the other hand, there are statistically significant differences between the genders as regards the complexities of the administrative process, lack of management expertise, the high risk of failure and the existence of an unfavourable climate for developing one's own business. Female students are the ones to consider these aspects as major difficulties.

As to age groups, results showed that respondents tend to look at the difficulties much in the same way, regardless of their age. Finally, the quality of both the management team and the technical staff stand out as key-factors for the success of developing one's own business.

The limitation of this study relates to the fact that it is a cross-sectional study and is therefore static. This limitation is likely to be overcome in future research that allows monitoring the students being surveyed in order to ascertain whether the entrepreneurial potential is confirmed or, on the contrary, is shown by practice to be merely an intention. A longitudinal study is then necessary

if one is to have a dynamic vision of the process and determine if the students under survey had in fact accomplished their dreams as well as contributed to the development of Alto Trás-os-Montes region.

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